IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Rodney George WADE — Examiner: C. J. Price

Serial No.: 10/688,886 — Group Art Unit: 3753

Filed: October 21, 2003 — Confirmation No. 2767

Title: FIRST FLUSH WATER DIVERTER

(A) Appeal Brief

Mail Stop: Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Advisory Action dated February 22, 2007 and to the Final Rejection of June 20, 2006, Appellant submits an Appeal Brief herewith.

No fee is believed to be due with this response, however, the Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

(B) Table of Contents

(C) Real Parties In Interest

The real party in interest in the present application is the named inventor, Rodney George Wade.

(D) Related Appeals And Interference

There are no known related appeals or interferences.

(E) Status of the Claims

Claims 1-9 are on appeal claim 10 having been cancelled.

Claims 1-9 have been rejected. A detailed status of the claims is presented as follows:

Claims 1, 2, 3, 5, 8 and 9 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Wade (AU-B-16551/95) in view of Wallis (U.S. 5,407,091).

Claims 4 and 6 are finally rejected under 35 U.S.C. §103(a) as being unpatentable over Wade and Wallis as applied to claims 1, 2, 3, 5, 8 and 9 and further in view of Sill (U.S. 1,460,613).

(F) Status of Amendments

All of Appellants amendments have been entered.

(G) Summary of the Invention

Diverters collect initial rainwater flows from roofs that pollute the rainwater with debris that has accumulated on the roofs since the previous rain. Known diverters tend to have a myriad of springs, flaps and valves that invariably fail to operate, waste large quantities of water or require setting of components for proper operation. Some diverters result in the loss of as much as 50 liters of water and have continual water loss, which can result in most if not all water being diverted to waste in light rainfall conditions.

The diverter 10 of the present invention diverts rainwater by using a T-piece 13 inserted in a water line (piping 16), which transports water from a roof gutter (not shown) to (piping 17) that is connected to a storage or usage area (not shown). The T-piece 13 has an outlet at circular seat 18 that opens into a rainwater collection chamber 14 that collects the initial flow of dirty rainwater that has washed off the roof of the building. The collection chamber 14 has a drain (outlet15), which continually empties the collection chamber as it fills from the T-piece 13 through the opening provided by the circular seat 18. Once the collection chamber 14 fills with rainwater, a float 19 seals the opening defined by the circular seat 18 so that substantially all of the rainwater flows through pipe 17 to the storage or usage area.

The present invention determines the carrying capacity of the collection chamber 14 to adjust for a local pollution factor (PF) wherein the factor varies between 0.0005 for light pollution locations (no trees that drop debris and have insects and birds) to 0.002 for high pollution locations (which have trees and thus fewer insects and birds). The pollution factor (PF) is multiplied by the roof area (RA) and then by 1000 to determine the carrying capacity (DF) of the collection chamber 14 in liters. In other words, DF=RA x PF x 1000.

In claim 2 the collection chamber is a pvc tube having a diameter of approximately 300 mm. To determine the length of the pipe and thus the carrying capacity according to the formula DF=RA x PF x 1000, one need only insert the area of the roof (RA), select the appropriate pollution factor (PF) multiply the product by 1000 and divide by 300mm. The PVC pipe is then

cut to this determined length and one has a first flush water diverter in accordance with claim 2 of the present invention, wherein the collection chamber 14 is correctly sized for roof area (RA) and pollution factor (PF).

In claim 3 the length is shown to be in a selected range of about 225mm to about 2005mm. Thus, a correctly sized collection chamber for a specific site is readily fabricated by simply cutting off a length of pipe from a stock supply of 300mm pipe.

Claims 6 and 7 recite respectively that a conical cap 20 connects the T-piece 13 to the collection chamber 14 and that a conical receptacle 21 is fitted to the lower end of the collection chamber 14 at the outlet 15.

(H) Grounds Of Rejection To Be Reviewed On Appeal

The grounds of rejection to be reviewed are as follows:

the rejection of claims 1, 2, 3, 5, 8 and 9 under 35 U.S.C. §103(a) as being unpatentable over Wade '551 in view of Wallis '091;

the rejection of claims 4 and 6 under 35 U.S.C. §103(a) as being unpatentable over Wade and Wallis , as applied to claim 1, and further in view of Sill '613, and

the rejection of claim 7 under 35 U.S.C. §103(a) as being unpatentable over APA (AU-B-16551/95, i.e. Wade '551) in view of Wallis '091.

(I) Arguments

Rejections Under 35 U.S.C. §103(a)

Claims 1, 2, 3, 5, 8 and 9 are patentable over Wade '551 in view of Wallis '091.

Considering Wade '835, which is Appellant's prior art (APA), it is pointed out that Appellant recites in single independent claim 1 that the collection chamber 14 has a diameter "which is an integral multiple of the diameter of the T-piece inlet (16)". This is clearly not the case with Wade '835 because in Wade '835 the collection chamber 14 appears to have the same diameter as the corresponding T-piece inlet structure 16, whereas in Appellant's invention the collection chamber is always larger. Moreover, in Appellant's claimed invention the pollution factor (PF), which is determined on site, varies between 0.0005 for light pollution locations and 0.002 for heavy pollution locations. There is no consideration at all in Wade '835 of a pollution factor (PF). The pollution factor determines the rainwater carrying capacity (DF) of the collection chamber 14, which capacity is measured in liters and effects the selected diameter and length of the collection chamber 14. Wade '835 is not simultaneously configurable for both roof area (RA) and pollution factor (PF), as in the case with Appellant's claimed invention.

Clearly, Appellant's claim 1 and disclosure, including Figures 1 and 2, show that the collection chamber 14 has a diameter, that is an integral multiple (other than one) of the T-piece inlet 17 (at 18) of the collection chamber. Moreover, there is no consideration of utilizing the claimed pollution factors (PF) to rainwater carrying capacity, i.e., volume of the collection chamber 14, as a function of pollution factors between 0.0005 and 0.002.

Wallis '091 does not cure these deficiencies of Wade '835 as a reference against Appellant's independent claim 1. The passage in Wallis '091 referred to by the Examiner (column 2, line 6 - column 3, line 2) merely suggests that a certain (and apparently arbitrarily chosen) volume of rainwater (in this instance 50 liters) that flows off a roof will contain foreign matter such as dust. The volume of 50 liters is an arbitrary value that is not calculated based on

roof area (RA) and pollution factor (PF), as is the case with the formula DF-RA x PF x 1000 of Appellant's claims. By choosing an arbitrary volume, Wallis does not consider the area of the roof in question, or whether there are high or low pollution levels on the roof. Instead, Wallis '091 merely suggests that, by diverting 50 liters of rainwater, the remaining volume of water should be free of pollution.

Clearly then, the approach of Wallis '091 can lead to one of two equally unattractive situations. If the roof has very low levels of pollution, then diverting 50 liters of water is likely to waste clean water. On the other hand, if the roof is heavily polluted, diverting 50 liters is unlikely to be enough water to avoid contamination of the water tank by polluted water. Moreover, Wallis '091 neither discloses nor suggests that there is a need to calculate an effective volume of water to be diverted based on the level on pollution of the roof or the surface area of the roof. Appellant's claimed invention clearly provides an improvement over the combination of Wade '835 and Wallis '091 that would not have been obvious to one skilled in the art of rainwater collection.

Appellant respectfully submits that for the Examiner to dismiss Appellant's limitations defining rainwater carrying capacity (DF) as obvious, without any evidence other than the Examiner's personal opinion, is conclusory and therefore not appropriate without a declaration accompanied by supporting evidence. In view of the foregoing arguments, it is respectfully requested that the rejection of independent claim 1, and claims 2, 3, 5, 8 and 9 depended therefrom, be withdrawn as not establishing a *prima facie* case of obviousness.

Claims 4 and 6 are patentable over Wade and Wallis as applied to claim 1 and further in view of Sill '613

The rejection of claims 4 and 6 under 35 U.S.C. §103(a) as unpatentable over Wade '085 and Wallis '091 in view of Sill '613 is traversed in that, whatever else Sill '613 teaches, Sill does not cure the deficiencies of Wade and Wallis as references against Appellant's claimed invention.

While Sill '613 shows a tank on a stand, the tank of Sill '613 corresponds to Appellant's "storage or usage area", rather than a collection chamber, such as collection chamber 14 of Appellant for diverted water. In addition, Sill '613 does not disclose a collection tank having its carrying capacity (in liters) derived from the formula DF-RA x PF x 1000.

Moreover, there is absolutely no disclosure in Sill '613 of a conical cap connecting a T-piece to a collection chamber. There is a convex "manhole cover 17" in Sill '613 but it is not conical and it does not join a T-piece to a collection chamber. In Appellant's claimed invention the conical cap 17 is needed to join the T-piece 13 to the collection chamber 14, because the T-piece and collection chamber are of different diameters with the diameter of the collection chamber being larger than that of the T-piece inlet i.e., being an integral multiple thereof as is seen in Figs. 1 and 2. In addition, the inner surface of Appellant's conical cap 17 guides the float (ball 19) to seal at 18 with the T-piece. Accordingly, it is respectfully requested that this rejection of claims 4 and 6 be withdrawn as not establishing a *prima facie* case of obviousness.

Claim 7 is patentable over APA in view of Wallis '091:

APA is actually Wade '551. Note in the rejection of 12/07/2005, the Examiner states in paragraph 8 the following:

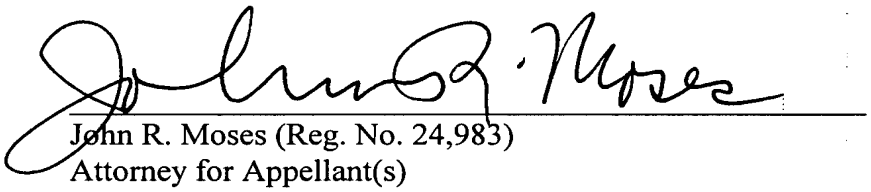
> ". . . unpatentable by Wade (AU-B-16551/95) i.e., Appellant's prior art, APA."

Appellant respectfully submits that claim 7 is therefore not obvious for the same reasons as that claim 1 is not obvious in that the same references are relied on. Accordingly, it is respectfully requested that the rejection of claim 7 also be withdrawn.

Reply to Response to Arguments:

Appellant respectfully submits that using off the shelf pipe as suggested by the Examiner with sizes in ½ inch increments does not suggest "an integral multiple", i.e., a whole number related to collection chamber diameter. This concept, developed only by Appellant, could be obvious to one skilled in the art only by hindsight. While pollution is a factor in Wade '085, there is absolutely no suggestion or motivation to use a pollution factor (PF) as defined by Appellant and roof area (RA) to determine rainwater carrying capacity (DF) to decide what water volume is collected and what volume is discarded to a collection tank. It is respectfully submitted that the 35 U.S.C. §103(a) rejections are conclusory, i.e., without evidence, and should be withdrawn.

Respectfully submitted,



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(J) Claims Appendix

1. A first flush water diverter comprising a T-piece with associated rainwater collection chamber, which T-piece is adapted for connection in a rainwater flow path to intercept the flow of rainwater from a roof into a down pipe or directly to a storage or usage area, said collection chamber including a float which seals on a seat adjacent a T-piece inlet to the collection chamber when the collection chamber is charged with rainwater and having a diameter which is an integral multiple of the diameter of the T-piece inlet, the said collection chamber having a rainwater carrying capacity defined by the formula: DF = RA x PF x 1000 where DF is the rainwater carrying capacity, or diversion factor, measured in liters, RA is the associated roof area measured in square meters, PF is the Pollution Factor for the roof location which is determined on site and varies between 0.0005 for light pollution locations and 0.002 for heavy pollution locations, and wherein said collection chamber includes an outlet and associated flow control valve to regulate the flow of diverted rainwater from the collection chamber.

2. A first flush water diverter as claimed in claim 1, wherein the collection chamber is a pvc tube having a diameter of approximately 300mm.

3. A first flush water diverter as claimed in claim 2, wherein the pvc tube has a length of between about 225mm and 2005mm.

4. A first flush water diverter as claimed in claim 1, wherein the collection chamber is adapted for support on a stand or for connection to a wall or post.

5. A first flush water diverter as claimed in claim 1 wherein a hose connection-is fitted to the flow control valve.

6. A first flush water diverter as claimed in claim 1, wherein a conical cap connects the T-piece to the collection chamber.

7. A first flush water diverter as claimed in claim 1, wherein a conical receptacle is fitted to the lower end of the collection chamber which houses the outlet.

8. A first flush water diverter as claimed in claim 1, wherein a filter screen is provided at the outlet.

9. A first flush water diverter as claimed in claim 1, wherein the float is at least one a ball which freely floats on the surface of the rainwater which collects in the collection chamber.

(K) Evidence of Appendix

None

(L) Related Proceedings Appendix

None